



UNIVERSITI TEKNOLOGI MARA

MIC712: MOLECULAR MICROBIOLOGY

Course Name (English)	MOLECULAR MICROBIOLOGY APPROVED	
Course Code	MIC712	
MQF Credit	3	
Course Description	This course is designed to equip students with knowledge and understanding of the integration between microbial genomics and proteomics study. The topics are divided into three parts beginning with recombinant DNA technology followed by proteomics with relevant advanced bioinformatics principles and tools embedded in both areas. Students will be exposed to the cloning strategies using various vectors, gene manipulation and analysis.	
Transferable Skills	To provide knowledge and understanding of integration between microbial genomics and proteomics with relevant advanced bioinformatics principles.	
Teaching Methodologies	Lectures, Discussion, Presentation	
CLO	CLO1 Explain the principles and strategies of gene cloning in various cloning vectors, gene manipulation and analysis using advance molecular biology techniques CLO2 Display good presentation skills in topics related to cloning strategies and protein expression in microbial host system. CLO3 Formulate research strategies to study microbial proteomics and protein modification and identification CLO4 Perform bioinformatics search and tools to analyse microbial phylogenetics and evolution, microbial proteomics and protein expression analysis	
Pre-Requisite Courses	No course recommendations	
Reading List	Recommended Text	- David H. Persing, Fred C. Tenover, Melissa B. Miller, Randall T. Hayden 2016, <i>Molecular Microbiology</i>, 3 Ed., ASM Press New York [ISBN: 9781555819088] - Michael M. Cox, Michael O'Donnell 2015, <i>Molecular Biology</i>, WH Freeman [ISBN: 9781464126147] - Ruchi Singh 2015, <i>Bioinformatics: Genomics and Proteomics</i>, Vikas Publishing House [ISBN: 9325978555] - Devarajan Thangadurai, Jeyabalan Sangeetha 2015, <i>Genomics and Proteomics</i>, CRC Press [ISBN: 9781498723114]
Article/Paper List	Reference Article/Paper Resources	- Christopher J. Howe 2007, Gene Cloning and Manipulation http://DOI: 10.1017/CBO9780511807343 - Germán L. Rosano and Eduardo A. Ceccarelli 2014, Recombinant Protein Expression in Escherichia coli: Advances and Challenges, <i>Frontiers in Microbiology</i> http://doi: 10.3389/fmicb.2014.00172
Other References	This Course does not have any other resources	